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I. BACKGROUND

INTRODUCTION

This Comprehensive Conservation Plan for Bayou Cocodrie National Wildlife Refuge was prepared to guide management actions and direction for the refuge over the next 15 years. Fish and wildlife conservation will receive first priority in refuge management; wildlife dependent recreation will be allowed and encouraged as long as it is compatible with, and does not detract from, the mission of the refuge or the purposes for which it was established.

A planning team developed a range of alternatives that best met the goals and objectives of the refuge and that could be implemented within the 15-year period. A draft comprehensive conservation plan/environmental assessment describing the Services proposed alternative, as well as the other alternatives considered and their effects on the environment, was made available to state and federal government agencies, conservation partners, and the general public for review and comment. Comments from each entity were considered in the development of this plan.

PURPOSE AND NEED FOR PLAN

The purpose of the plan is to identify the role the refuge will play in support of the mission of the National Wildlife Refuge System and to provide guidance in refuge management activities.

Specifically, the plan is needed to:

- Provide a clear statement of refuge management direction;
- Provide refuge neighbors, visitors, and government officials with an understanding of Service management actions on and around the refuge;
- Ensure that Service management actions, including land protection and recreation/education programs are consistent with the mandates of the National Wildlife Refuge System;
- Ensure that the management of the refuge is consistent with federal, state, and county plans; and
- Provide a basis for the development of budget requests for operations, maintenance, and capital improvement needs.

Perhaps the greatest need of the Service is communication with the public and the public's participation in carrying out the mission of the National Wildlife Refuge System. Many agencies, organizations, institutions, and businesses have developed relationships with the Service to advance the mission of national wildlife refuges. This comprehensive conservation plan supports the Partners-in-Flight Initiative; the Lower Mississippi Valley Migratory Bird Wetland Conservation Initiative; the North American Waterfowl Management Plan; the Western Hemisphere Shorebird Reserve Network; the

American Woodcock Management Plan; and the National Wetlands Priority Conservation Plan. For further information regarding migratory birds, see website <http://birds.fws.gov>.

FISH AND WILDLIFE SERVICE

Mission

As part of its mission, the Service manages more than 540 national wildlife refuges covering more than 95 million acres. These areas comprise the National Wildlife Refuge System, the world's largest collection of lands, with 77 million acres in Alaska and the remaining acres spread across the other 49 states and several island territories.

Description

The Fish and Wildlife Service is the primary federal agency responsible for conserving, protecting, and enhancing the Nation's fish and wildlife populations and their habitats. The Service shares some conservation responsibilities with other federal, state, tribal, local, and private entities. The Service also has specific trustee responsibilities for migratory birds, threatened and endangered species, anadromous fish, and certain marine mammals, as well as for lands and waters administered by the Service to manage and protect these resources.

NATIONAL WILDLIFE REFUGE SYSTEM

Mission

The mission of the National Wildlife Refuge System, as defined by the National Wildlife Refuge System Improvement Act of 1997 is:

"...to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans."

Description

The National Wildlife Refuge System Improvement Act of 1997 established, for the first time, a clear legislative mission of wildlife conservation for the National Wildlife Refuge System. Activities were initiated in 1997 to complement the direction of this new legislation, including the preparation of comprehensive conservation plans for all refuges. These plans, which are developed with full public involvement, guide the management of refuges by establishing natural resource and recreation/education programs. The Act states that each refuge shall be managed to:

- Fulfill the mission of the National Wildlife Refuge System;
- Fulfill the individual purpose of each refuge;
- Consider the needs of wildlife first;

- Fulfill requirements of comprehensive conservation plans that are prepared for each unit of the refuge system;
- Maintain the biological integrity, diversity, and environmental health of the refuge system;
- Recognize that wildlife-dependent recreation activities including hunting, fishing, wildlife observation, wildlife photography, and environmental education and interpretation are legitimate and priority public uses; and allow refuge managers authority to determine compatible public uses.

Approximately 37.5 million people visited national wildlife refuges in 1998, most to observe wildlife in their natural habitats. As visitation grows, there are significant economic benefits to local communities. Economists have discovered that refuge visitors contribute more than \$400 million annually to local economies. Nearly 40 percent of the country's adults spent \$101 billion on wildlife-related pursuits in 1996, according to the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (Fish and Wildlife Service 1996).

Volunteers continue to be a major contributor to the success of the refuge system. In 1998, volunteers contributed more than 1.5 million hours on refuges nationwide, a service valued at more than \$20.6 million.

The wildlife and habitat vision for national wildlife refuges stresses that wildlife come first; that ecosystems, biodiversity, and wilderness are vital concepts in refuge management; that refuges must be healthy and growth must be strategic; and that the refuge system serves as a model for habitat management with broad participation from others.

LEGAL POLICY CONTEXT

Administration of national wildlife refuges is guided by the mission and goals of the National Wildlife Refuge System, Congressional legislation, Presidential Executive Orders, and international treaties. Policies for management options of refuges are further refined by administrative guidelines established by the Secretary of the Interior and by policy guidelines established by the Director of the Fish and Wildlife Service. Refer to Appendix C for a complete listing of relevant legal mandates.

Lands within the National Wildlife Refuge System are closed to public use unless specifically and legally opened. All programs and uses must be evaluated based on mandates set forth in the National Wildlife Refuge System Improvement Act. Those mandates are to:

- Contribute to ecosystem goals, as well as refuge purposes and goals;
- Conserve, manage, and restore fish, wildlife, and plant resources and their habitats;
- Monitor the trends of fish, wildlife, and plants;
- Manage and ensure appropriate visitor uses as those uses benefit the conservation of fish and wildlife resources and contribute to the enjoyment of the public (these uses include hunting, fishing,

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Wallace Lake
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- wildlife observation, wildlife photography, and environmental education and interpretation); and
- Ensure that visitor activities are compatible with refuge purposes.

RELATIONSHIP TO STATE WILDLIFE AGENCY

A provision of the National Wildlife Refuge System Improvement Act of 1997, and subsequent agency policy, is that the Service shall ensure timely and effective cooperation and collaboration with other federal agencies and state fish and wildlife agencies during the course of acquiring and managing refuges. State wildlife management areas and national wildlife refuges provide the foundation for protection of species, and contribute to the overall health and sustainment of fish and wildlife species in the State of Louisiana.

The Louisiana Department of Wildlife and Fisheries (<http://www.wlf.state.la.us>) is a state-partnering agency with the Service, charged with enforcement responsibilities relating to migratory birds and endangered species, as well as managing state natural resources and approximately 1.4 million acres of coastal marshes and wildlife management areas. The Department coordinates the state wildlife conservation program and provides public recreation opportunities including an extensive hunting and fishing program on state wildlife management areas, such as the 36,000-acre Red River Wildlife Management Area in Concordia Parish (Figure 1). The state's participation and contribution throughout this comprehensive conservation planning process provide for ongoing opportunities and open dialogue to improve the ecological sustainment of fish and wildlife in Louisiana. An integral part of the comprehensive conservation planning process is integrating common mission objectives, where appropriate.

ECOSYSTEM CONTEXT

Overview

Sustainable communities and species conservation and recovery require the joint efforts of private landowners and local communities, as well as state and federal governments. The Fish and Wildlife Service is initiating cooperative partnerships in an effort to reduce the declining trend of fish and wildlife populations and biological diversity within the Lower Mississippi Valley Ecosystem (Figure 2).

The Lower Mississippi Valley once supported a vast bottomland hardwood forest complex that extended along the Mississippi River from Illinois to Louisiana. Today, less than 20 percent of this bottomland hardwood forest remains and most is fragmented or remains in scattered patches throughout the region (Figure 3). Floodwaters once recharged wildlife habitats and created rich, dynamic systems that supported a diverse abundance of fish and wildlife species. Today, the Lower Mississippi Valley is bisected by levees and flows are restricted by flood control projects and agricultural diversion. Water quality is significantly impacted by agricultural and industrial runoff. Rivers

Figure 1. Conservation management focus areas Bayou Cocodrie Refuge

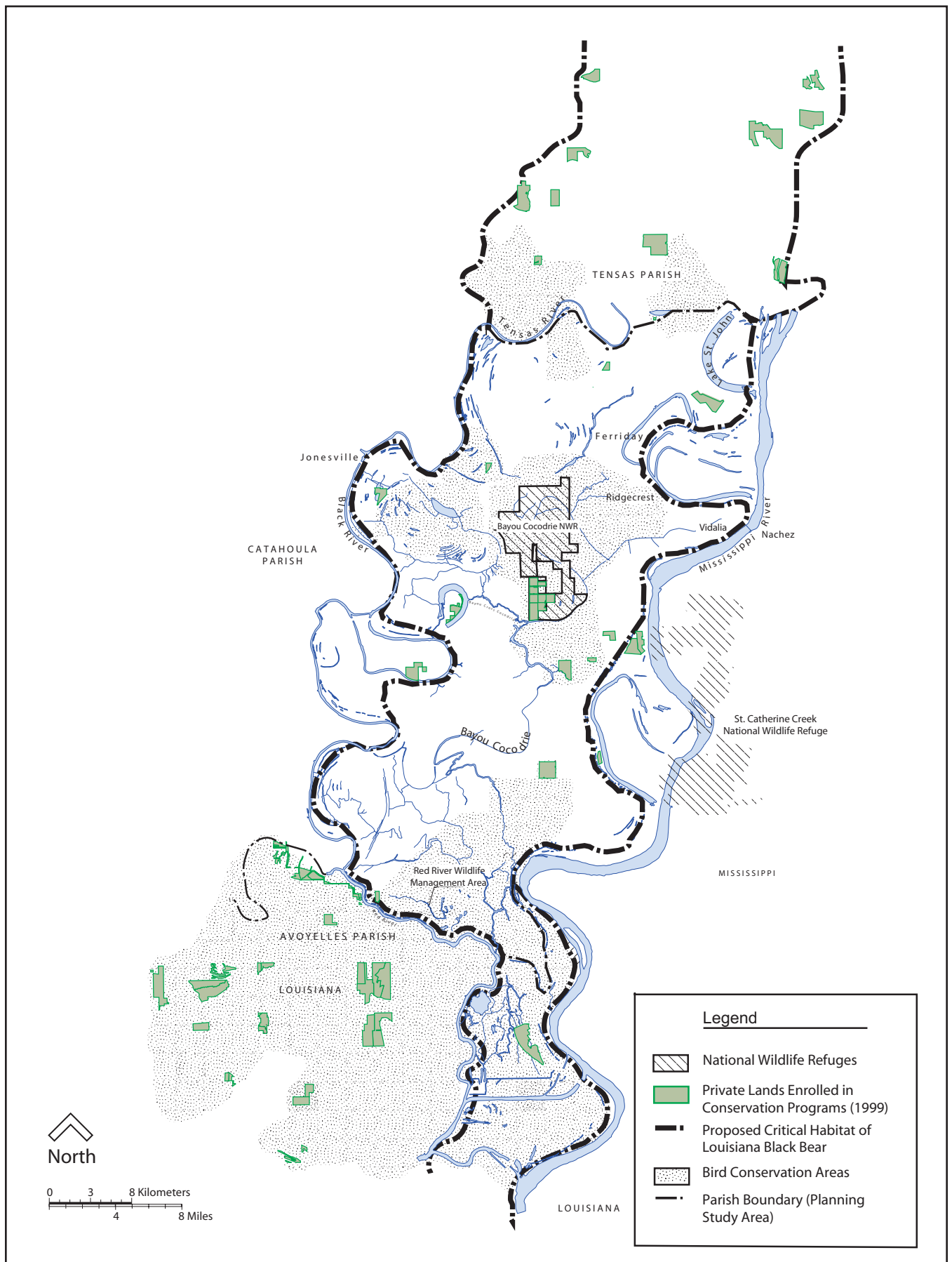


Figure 2. Lower Mississippi Valley Ecosystem

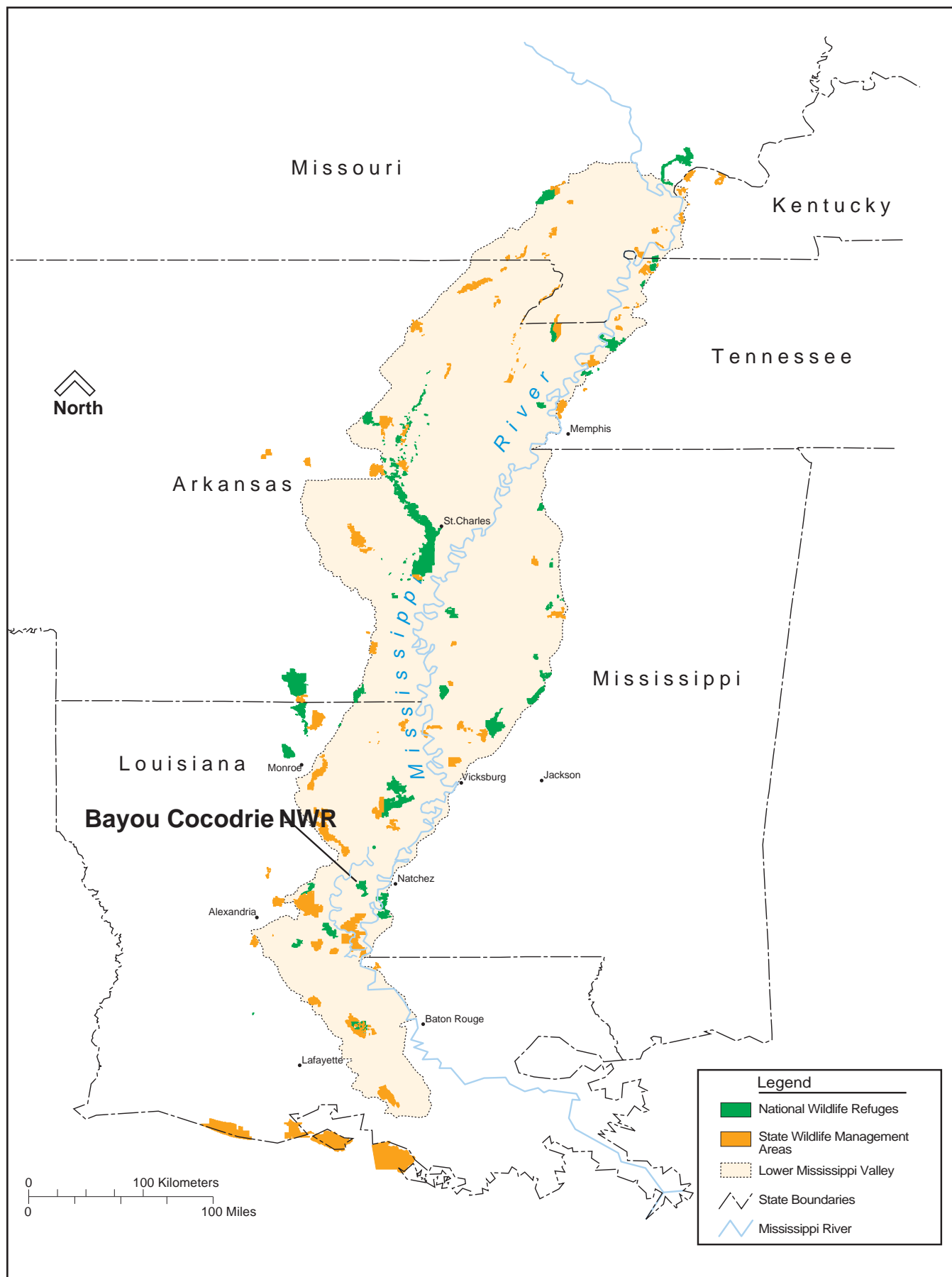
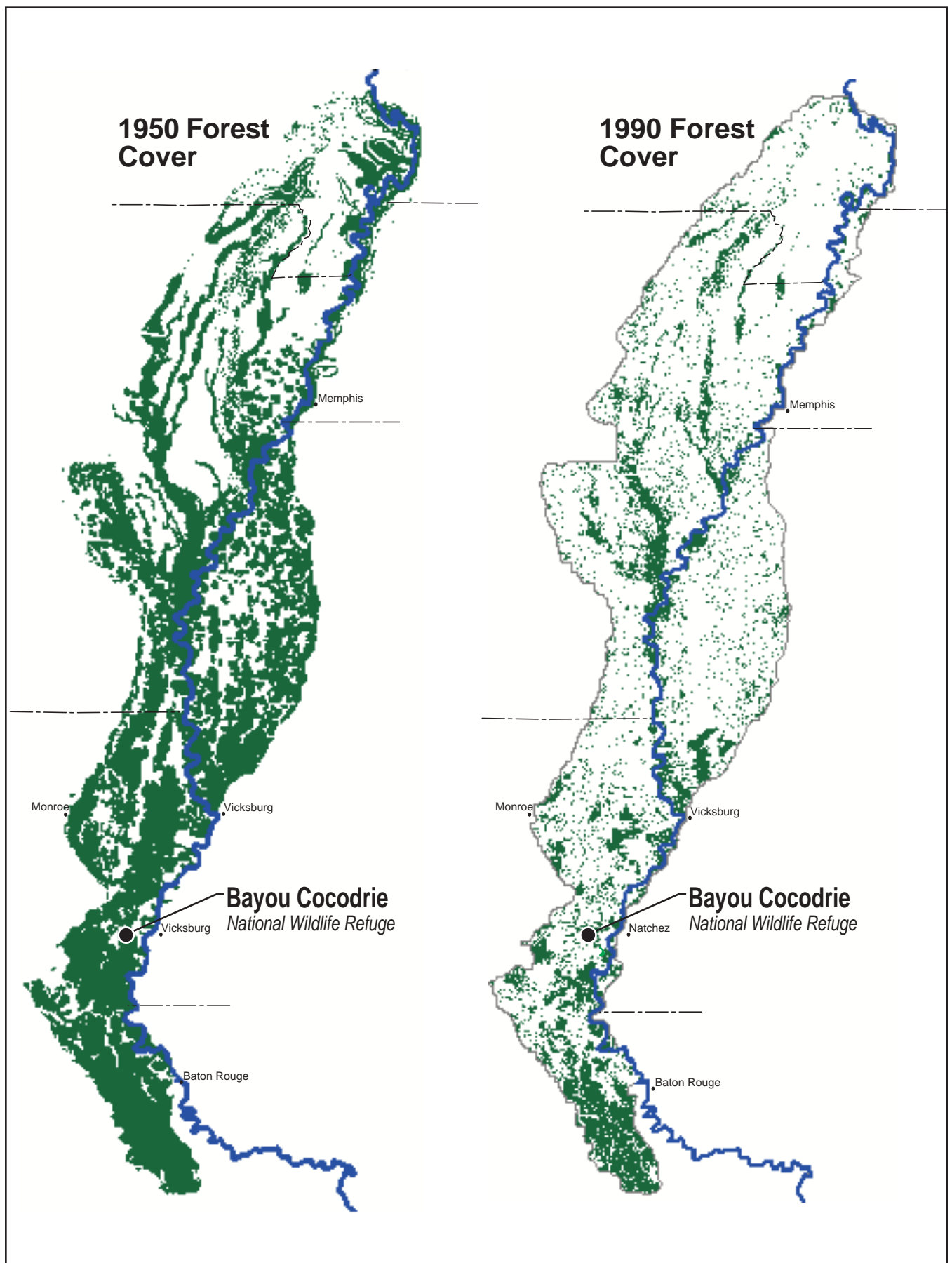


Figure 3. Forest cover changes in the Mississippi Valley



and water bodies throughout are highly turbid, laden with pesticides, and support a small fraction of the once abundant aquatic resources. These declines prompted the Service to designate bottomland hardwood forests found in this ecosystem as areas of special concern.

The Service is focusing efforts to adopt collaborative resource partnerships within and outside the agency to reduce the declining trend of fish and wildlife populations and biological diversity, to establish conservation priorities, to clarify goals, and to solve common threats and problems associated with fish and wildlife resources. Biological objectives in the Lower Mississippi Valley, for species groups targeted in this plan, reflect the Partners-in-Flight Plan, North American Waterfowl Management Plan, Western Hemisphere Shorebird Reserve Network, and the recovery of the Louisiana sub-population of black bears (Figure 4).

Ecological Threats and Problems

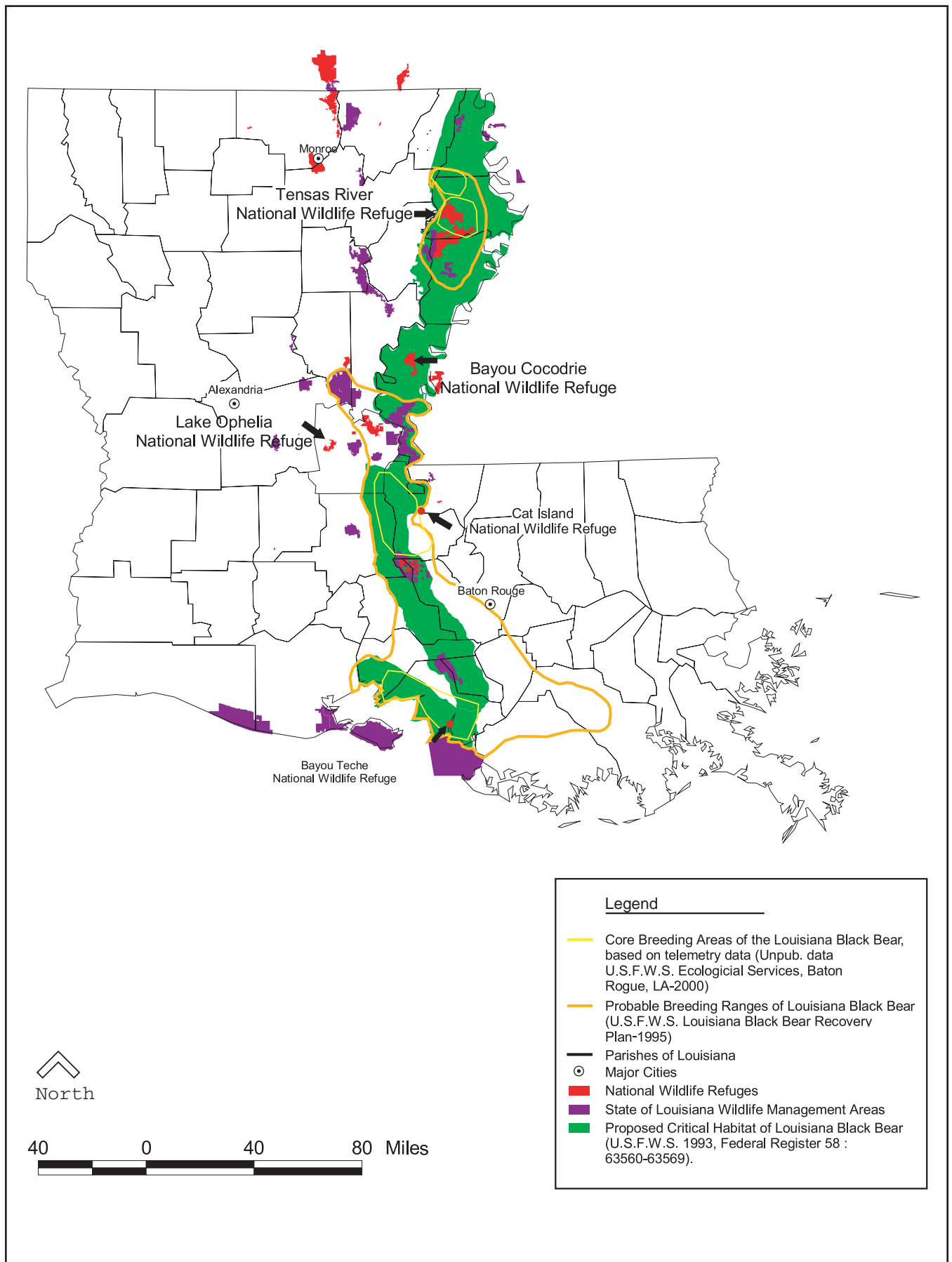
National wildlife refuges in the Lower Mississippi Valley serve as part of the last safety net to support biological diversity--the greatest challenge facing the Service. Impacts and underlying causes and threats to biological diversity within the Lower Mississippi Valley include:

- The loss of sustainable communities, including the loss of 20 million acres of bottomland hardwood forests;
- The loss of connectivity between bottomland hardwood forest sites; e.g., forest fragmentation;
- The effects of constructing navigation and water diversion projects;
- The effects of agricultural and timber harvesting practices;
- The simplification of the remaining wildlife habitats within the ecosystem and gene pools; and
- The cumulative habitat effects of land and water resource development activities.

As a result of these causes and threats, many species endemic to the Lower Mississippi Valley have become threatened, endangered, or extinct. The Louisiana black bear is listed as threatened under the Endangered Species Act. The endangered red wolf and Florida panther are no longer found in the Lower Mississippi Valley; and the ivory-billed woodpecker and Bachman's warbler, once known to occur in the area, are considered endangered, if not extinct.

Elimination of forest habitats and forest fragmentation has decimated wildlife species throughout the Lower Mississippi Valley (Figure 3). Species most adversely affected by fragmentation are species that are area sensitive or dependent on special habitat requirements such as large, mature blocks of forest that offer secure nesting habitat and a particular food source. Forest fragmentation affects migratory songbirds mostly through high rates of nesting failure due to predation and cowbird parasitism--both are recognized by the Service as serious threats to wildlife in Louisiana. More than 70 species of breeding migratory songbirds are found in this region.

Figure 4. Breeding ranges and proposed critical habitat for the Louisiana black bear



Some of these species including the Swainson's warbler, prothonotary warbler, wood thrush, and cerulean warbler have declined significantly, and need the benefits of large forest blocks to recover and sustain their existence (pers. comm. Hunter, Fish and Wildlife Service).

Modifications to the historic flood plains have caused major declines in fisheries and aquatic resources productivity. The reduction of ecological functions from non-point source runoff of sediments, excess nutrients, and pesticides/herbicides is a continual threat to the remaining fisheries resources. The Service's Draft Fisheries and Aquatic Resources Strategic Management Plan for the Lower Mississippi River Ecosystem identifies 67 fish species as endangered, and 39 species as threatened. In addition, 16 other species are species of concern or proposed for listing. Only two threatened/endangered fish species occur in Louisiana.

The lack of bottomland hardwood forests and the impacts associated with fragmented forests pose a serious threat to migratory bird populations, black bear, and other resident species.

CONSERVATION PRIORITIES AND INITIATIVES

Conservation priorities for national wildlife refuges in the Lower Mississippi Valley focus on threatened and endangered species, trust species, and species of area concern. By working with others, the Service is more effective in achieving its overall mission and management goals. A combination of land protection and habitat management methods is utilized by the Service and others to compensate for bottomland hardwood habitat loss and to meet shared/common long-term goals established for this area.

Bottomland hardwood forests are ranked as the highest conservation priority of the Fish and Wildlife Service and other agencies on which to focus management efforts. For example, the U.S. Department of Agriculture is working with the Service and landowners to restore forests on private lands to contribute to the recovery of the Louisiana black bear. The Lower Mississippi River Joint Venture (a consortium of public and private conservation groups) initiated cooperative efforts to restore lands that provide maximum benefits to migratory songbirds, and has identified conservation areas on which to focus future land protection and restoration efforts. The long-term goal is to provide forest islands called forest Source Population Objectives in the Lower Mississippi Valley ranging in size from 10,000 to more than 100,000 acres. The forest Source Population Objectives are priority areas for forest restoration and will someday serve as important anchors for biological diversity.

The Lower Mississippi Valley serves as the primary wintering habitat for mid-continent waterfowl populations, as well as breeding and migration habitat for migratory songbirds returning from Central and South America.

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Black bear
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The recovery of the Louisiana black bear involves a major conservation endeavor between federal, state, and private participants including the Service, Natural Resources Conservation Service, state agencies, universities, private conservation organizations, and the Black Bear Conservation Committee. The Service's recovery plan is to establish viable populations, promote various land protection methods that will establish migration corridors, and protect habitat. The Black Bear Conservation Committee is made up of public and private partners in Mississippi, Louisiana, and east Texas, and uses education and outreach as tools to promote the recovery of the black bear. The committee adheres to the Service's recovery plan. The overall goal of both the committee and the Service is to restore and protect a series of large forest blocks connected by corridors; to facilitate recovery of the bear in Louisiana; to identify protection areas in Louisiana as special focus areas; and to support black bear populations and provide movement corridors that serve as conduits of genetic exchange within the Lower Mississippi Valley. These forest blocks overlay the forest Source Population Objectives identified by the Service for this refuge. Forest Source Population Objectives are also identified for Tensas River National Wildlife Refuge in Madison and Tensas parishes, Louisiana, the Red River/Three Rivers Wildlife Management Area Complex in Concordia Parish, and the Atchafalaya Basin.

Conservation management on private lands is extremely important to fish and wildlife resources. The synergy of all federal, state, tribal, and private organizations working together will ensure that the Service not only protects the more important areas, but also reduces redundancy and overlap.

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